

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
WASHINGTON, D.C. 20231**

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For: **Weight Bearing Systems and  
Methods Relating to Same**

Examiner: **To be determined**

Art Unit: **To be determined**

**PRELIMINARY AMENDMENT TO INVOKE INTERFERENCE**

The Honorable Commissioner  
of Patents and Trademarks  
Washington, D.C. 20231

Dear Sir:

The claims set forth herein are copied substantially verbatim from issued patent number 6131362. The only difference is that the term "planar" has been replaced with "substantially flat" to allow for flanges in the cutouts of the web between the channels. Applicant is concurrently filing papers thought to be sufficient to invoke an interference with issued patent 6131362. Please enter the following as a preliminary amendment.

**IN THE CLAIMS**

Please cancel claims 1-28, and add the following claims numbered 29-56:

29. (Added) A building beam structure comprising:  
two sheet metal chords, each of the chords having a flat end wall,

two opposed side walls extending from the end wall and having respective flat fastening surfaces to which materials may be connected, and  
two angular support walls, each of the angular support walls extending from one of the side walls, and the angular support walls converging inwardly from the side walls; and  
a sheet metal central web section disposed between the two chords and including  
a substantially flat main web wall extending straight between one of the angular support walls on each of the chords,  
a first web wall section extending from another of the angular support walls on one of the chords, and  
a second web wall section extending from another of the angular support walls on another of the chords.

30. (Added) A building beam structure of claim 29 further comprising fastening devices connecting the first and second web wall sections with the main web wall.
31. (Added) A building beam structure of claim 29 wherein the two sheet metal chords and the sheet metal central web section are made from a single piece of sheet metal.
32. (Added) A building beam structure of claim 29 wherein the two sheet metal chords and sheet metal central web section are made from a single piece of sheet metal having a thickness in the range of from approximately 16-gauge to approximately 24-gauge.
33. (Added) A building beam structure of claim 29 wherein the two sheet metal chords and sheet metal central web section are made from a single piece of approximately 20 gage sheet metal.
34. (Added) A building beam structure of claim 29 wherein the end wall of one chord is substantially parallel to the end wall of the other chord.
35. (Added) A building beam structure of claim 29 wherein the side walls are substantially perpendicular to each end wall.

36. (Added) A building beam structure of claim 29 wherein the central web section is substantially perpendicular to each end wall and substantially parallel to the side walls.
37. (Added) A building beam structure of claim 29 wherein each end wall is disposed in a generally horizontal direction and the central web section is disposed in a generally vertical direction.
38. (Added) A building beam structure of claim 29 wherein each end wall on each of the chords has two opposed longitudinal lateral edges.
39. (Added) A building beam structure of claim 38 wherein each of the two side walls on each of the chords has first and second longitudinal edges with the first longitudinal edge of each of the side walls being connected to one of the longitudinal lateral edges of one of the end walls.
40. (Added) A building beam structure of claim 39 wherein each of the two angular support walls on each of the chords has first and second longitudinal edges with the first longitudinal edge of each of the angular support walls being connected to the second longitudinal edge of one of the side walls.
41. (Added) A building beam structure of claim 40 wherein the main web wall of the central web section further comprises two longitudinal edges with one of the longitudinal edges being connected to the second longitudinal edge of one of the angular support walls on one of the chords and the other of the longitudinal edges being connected to the second longitudinal edge of one of the angular support walls on the other of the chords.
42. (Added) A building beam structure of claim 41 wherein the first web wall section of the central web section further comprises a longitudinal edge connected to the second longitudinal edge of the other of the angular support walls on one of the chords.
43. (Added) A building beam structure of claim 42 wherein the second web wall section of the central web section further comprises a longitudinal edge connected to the second longitudinal edge of the other of the angular support walls on the other of the chords.

44. (Added) A building beam structure of claim 29 further comprising a plurality of holes spaced longitudinally along the central web section and sized to receive apparatus for utilities.
45. (Added) A building beam structure of claim 29 wherein one of the side walls of one chord is cosubstantially flat with one of the side walls of the other chord, and the other of the side walls of the one chord is cosubstantially flat with the other of the side walls of the other chord.
46. (Added) A building beam structure comprising:
  - upper and lower sheet metal chords, each of the chords having a flat end wall,
  - two opposed side walls extending from the end wall and having respective flat fastening surfaces to which materials may be connected, and
  - two angular support walls, each of the angular support walls extending from one of the side walls, and the angular support walls converging inwardly from the side walls;
  - sheet metal substantially flat web walls extending from the angular support walls intermediate the upper and lower chords; and
  - fastening devices connecting the web walls together, thereby providing a sheet metal beam structure having upper and lower chords and an intermediate web.
47. (Added) A building beam structure of claim 46 wherein the web walls further comprise a main web wall extending between one of the angular support walls on each of the upper and lower chords,
  - a first web wall section extending from another of the angular support walls on the upper chord, and
  - a second web wall section extending from another of the angular support walls on the lower chord, the fastening devices connecting the first and second web wall sections with the main web wall.
48. (Added) A building beam structure of claim 46 wherein the web walls further comprise

a first pair of web wall sections, each of the first pair of web wall sections extending from one of the angular support walls on the upper chord,

a second pair of web wall sections each of the second pair of web wall sections extending from one of the angular support walls on the lower chord.

49. (Added) A building joist structure comprising:

first and second sheet metal chords, each of the chords having

a flat end wall with opposed longitudinal lateral edges,

two generally parallel side walls, each of the side walls having

a longitudinal first edge extending from one of the longitudinal lateral edges of the end wall,

a longitudinal second edge, and

a flat fastening surface between the first and second longitudinal edges of the side wall to which materials may be connected,

two angular support walls converging inwardly from the side walls, each of the support walls having

a longitudinal first edge extending from the longitudinal second edge of the side wall, and

a longitudinal second edge;

a sheet metal central web section connected between the two chords and including

a substantially flat main web wall having

a longitudinal first edge extending from the longitudinal second edge of the one of the support walls on the first chord, and

a longitudinal second edge extending from the longitudinal second edge of one of the support walls on the second chord, and

a first web wall section having a longitudinal first edge extending from the longitudinal second edge of another of the support walls on the first chord, and

a second web wall section having a longitudinal first edge extending from the longitudinal second edge of another of the support walls on the second chord, the first and second web wall sections extending adjacent the main web wall; and

fastening devices connecting the first and second web wall sections with the main web wall.

50. (Added) A building joist structure comprising:  
a single sheet metal piece having upper and lower opposed chords connected by a generally vertical web section;  
each of the chords having five walls including  
a generally horizontal flat end wall,  
two generally vertical side walls connected along upper longitudinal edges to the end wall,  
the side walls having respective flat fastening surfaces to which materials may be connected, and  
two angular support walls connected along upper longitudinal edges to lower longitudinal edges of the vertical side walls, the angular support walls converging inward from the vertical side walls; and  
the web section including  
first substantially flat web wall connected to first angular support walls on each of the top and bottom chords,  
a second web wall connected to a second angular support wall on the upper chord, and  
a third web wall connected to a second angular support wall on the lower chord.

51. (Added) A building beam structure of claim 50 further comprising fastening devices connecting the second and third web walls with the first web wall.

52. (Added) A building beam structure of claim 51 further comprising a plurality of holes spaced longitudinally along the central web section and sized to receive apparatus for utilities.

53. (Added) A building beam structure of claim 51 wherein one of the side walls of one chord is cosubstantially flat with one of the side walls of the other chord, and the other of the side walls of the one chord is cosubstantially flat with the other of the side walls of the other chord.

54. (Added) A building beam structure comprising:  
two sheet metal chords, each of the chords having  
a flat end wall,

two opposed side walls extending from the end wall and having respective flat fastening surfaces to which materials may be connected, and one angular support wall, the angular support wall extending from one of the side walls, and the angular support wall converging inwardly from the side walls; and a sheet metal central web section disposed between the two chords and including a main substantially flat web wall extending straight between another of the side walls on each of the chords,

a first web wall section extending from one of the angular support walls on one of the chords, and

a second web wall section extending from one of the angular support walls on another of the chords.

55. (Added) A building beam structure of claim 54 further comprising fastening devices connecting the first and second web wall sections with the main web wall.

56. (Added) A building beam structure comprising:

two sheet metal beam components, each of the beam components having a flat end wall,

two opposed side walls extending from the end wall and having respective flat fastening surfaces to which materials may be connected,

two angular support walls, each of the angular support walls extending from one of the side walls, and the angular support walls converging inwardly from the side walls, and

two sheet metal web walls, each of the web walls extending from one of the angular support walls,

the two beam components being disposed with respect to each other such that the web walls of one of the beam components overlap the web walls of the other of the beam components; and

fastening devices connecting the web walls, thereby providing a beam structure having opposed end walls with intermediate and interconnected web walls.

## REMARKS

Support for the copied claims should be apparent from the specification. For example, with respect to added claim 29:

Element	Supported in Specification
A building beam structure	<ul style="list-style-type: none"><li><input type="radio"/> Figure 1</li></ul>
two sheet metal chords, each of the chords having a flat end wall	<ul style="list-style-type: none"><li><input type="radio"/> chords (channels) are elements 100 in Figure 1; see also spec. page 6, lines 12-15</li><li><input type="radio"/> flat end wall is top supporting side 110 in Figure 1; see also spec. page 6, lines 12-15</li></ul>
two opposed side walls extending from the end wall and having respective flat fastening surfaces to which materials may be connected	<ul style="list-style-type: none"><li><input type="radio"/> opposed side walls are elements 120A &amp; 120B in Figure 1; see also spec. page 6, lines 12-15</li></ul>
two angular support walls, each of the angular support walls extending from one of the side walls, and the angular support walls converging inwardly from the side walls	<ul style="list-style-type: none"><li><input type="radio"/> angular support walls are left and right transition sides, elements 130A, and 130B in Figure 1; see also spec. page 6, lines 12-15</li></ul>
a sheet metal central web section disposed between the two chords	<ul style="list-style-type: none"><li><input type="radio"/> sheet metal central web section is web 200 in Figure 1; see also spec. page 6, lines 15-18</li></ul>
a substantially flat main web wall extending straight between one of the angular support walls on each of the chords	<ul style="list-style-type: none"><li><input type="radio"/> substantially flat main web wall is body 210 in Figure 1; see also spec. page 6, lines 15-18</li></ul>
a first web wall section extending from another of the angular support walls on one of the chords	<ul style="list-style-type: none"><li><input type="radio"/> first web wall section is chord lips 240 in Figure 1; see also spec. page 6, lines 15-18</li></ul>
a second web wall section extending from another of the angular support walls on another of the chords	<ul style="list-style-type: none"><li><input type="radio"/> substantially flat main web wall is chord lips 240 in Figure 1; see also spec. page 6, lines 15-18</li></ul>

**REQUEST FOR ALLOWANCE**

Claims 29-56 are pending. Applicant requests a speedy allowance of all pending claims.

Respectfully submitted,  
Fish & Associates, LLP

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